THE GOLD COLLECTION III

COMMODORE 64/128

LOADING INSTRUCTIONS

CASSETTE:

Ensure the cassette is fully rewound. Press **SHIFT** and **RUN/STOP** keys together, press **PLAY** on the cassette player and the game will load automatically and stop when loaded. To proceed into the second game switch the computer off and then on again and repeat the loading procedure. You may find it worthwhile to make a note of the counter reference on the cassette player. You must however ensure that the counter is zeroised before loading the first game.

DISK:

Type **LOAD " * ", 8, 1** and press **RETURN** and game will load automatically. A menu will appear for which you can selection option required.

Each game on this compilation loads separately so it is worthwhile to make a note when using the cassette recorder to make a note of the number each game commences at. For ease we have included a grid for you.

EXPRESS RAIDER	000	**ACE OF ACES**	
SUPER CYCLE	B	**MASTER OF THE UNIVERSE (ARCADE)**	110
LEVIATHAN	98	**SUPER HUEY II**	B

EXPRESS RAIDER

A sensational coin-op conversion from DATA-EAST. The ultimate in fast-action shoot 'em-ups. Your task is to engage in a battle against time to rob the fastest express in the West.
First you have to fight your way to the engine along the top of the train. When you have succeeded to knock out all of the enemies, you have to ride along the top of the train while taking part in a gun battle, with you pitched against some of the meanest cowboys in the West.

LOADING:

After loading, the menu which is displayed on the screen will ask you in which mode you want to play.

(A) PRACTICE MODE:

32 lives. You can practice on the first two trains though your scores will not appear on the score table.

(B) NORMAL MODE:

5 lives, 8 trains. Your scores will be listed on the score table. If you lose your lives, a screen message will prompt: "Press button to continue".

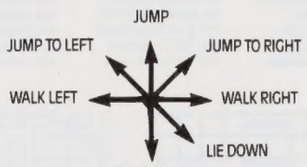
If you press **FIRE** within 10 seconds, you will go to the carriage of the train where you died, where you can continue on the same train. By waiting 10 seconds a screen message will indicate "Press button to restart".

Press **FIRE** and you will restart the game. Tapping **RESTORE** key at any point during the game will restart the game again.

(C) ADVANCED MODE:

5 lives, 8 trains. Your scores will be listed on the score table. In all cases when your lives run out, you have to restart the game.

SELECTING SKILL LEVELS (4 LEVELS)
Connect the Joystick to either port and select by moving the Joystick up and down and pressing **FIRE.** Having completed the time selections, press **FIRE** to start or reselect by moving Joystick up.
GAME CONTROL:



FIRE:

When standing up or lying down – punch.
When crouching – kick (and punch, if the stick is pushed to the left).
When jumping – kick.
When riding – the rider can move in 8 directions so as to be able to aim. You will be left by the carriage if the Joystick is in the central position.
Fire + Down – duck down in the saddle, in this case you can not be shot from the train but you will be left behind by the carriage.

SCORING:

Your score will rise by:
1) Hitting: (a) people (b) flying objects and (c) hanging signs.
2) For carriage completed.
3) For shooting people, hand grenades and ducks.

You will lose strength if you are hit by enemies, flying objects or hanging signs.

You will lose a life if your strength goes down to zero, you run out of time or you are shot. A bonus life is added for every 50,000 points scored (normal and advanced mode).

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SUPER CYCLE

INTRODUCTION

Open road racing – wheel to wheel – pistons screaming and rubber burning. That's the challenge of SUPER CYCLE. Before you begin, choose your machine and your leathers. Choose carefully, there's an ordeal ahead.

You and your machine will be pushed to the max by the course, the other competitors, and the relentless clock.

You must complete each of the race courses within a time limit, in order to continue. Crash and you lose valuable seconds. Each of the more than seven courses poses unique challenges – water on the road, ice, road barricades and other dangerous obstacles. When you see a road sign that means slippery when wet, you better listen. There's day and night courses, city and country, hills and mountains, desert courses and streaking through the sunlight next to Cape Canaveral.

Accelerate up through the gears, jockey for position and bump the other riders. Go for top speed, but try not to go out of control.

Good luck. Your reflexes better be as sharp as the turns up ahead.

OBJECTIVE

You must complete each race course within the specified time, in order to go on to the next course. Watch out for the other riders – you can bump them and they can bump you. Steer through the pack, and avoid road obstacles – crashing eats up valuable time. Complete all the courses at one of the difficulty levels and you get a checkered flag next to your name on the racing scoreboard.

GETTING STARTED

Press **SHIFT** and **RUN/STOP** keys together. Press **PLAY** on the cassette recorder and follow screen prompts. **IMPORTANT please ignore prompt to rewind and insert Side 2 as this does not apply to this version. The game will load automatically all from one side of the cassette.**

THE CONTROLS

Push forward on the joystick to accelerate, and pull back to slow down. Push left or right with the joystick to steer.

There are three gears. To gear up, push the joystick forward and press the fire button. With the joystick centred, simply press the fire button to gear down. The three lights in the centre of the dash indicate what gear you're in. The top light is the highest gear. The bottom light is the lowest gear. The light is coloured yellow for the gear you're in.

RACING

Each course has a set time limit. The bottom of your dash show your elapsed time, and your total points. The more distance you cover, the more points you accumulate.
Watch out for road conditions and unusual obstacles. You never know what you're going to find out there. Lamp posts, oil slicks, even road pylons that narrow the course to a single lane. Watch for special bonus flags – hit those for extra points and time.

Time it just right, cut and accelerate with split second precision, and you could end up on top. On top of the racing scoreboard!

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LEVIATHAN

Leviathan takes you thirty three seconds into the future, where pop videos inspire crazy fantasies in the minds of ordinary people. Your objective (we were going to call it a mission, but that's a bit pretentious don't you think?) is to seek out and destroy enemy ships in three excitingly different planet zones:
MOONSCAPE (LEVIATHAN Master Program)
CITY SCAPE (Landscape 1)
GREEKSCAPE (Landscape 2)

Each zone must be crossed. LEVIATHAN destroying all the enemy ships in each zone within the allotted time. If successful, select the next skill level, or cross to the next zone, if you dare.

You have limited fuel (audible warnings will keep you on your toes), unlimited missiles, 5 lives plus a bonus life every 5000 points, and must have the will to succeed! Extra fuel can be collected by landing on the arrows near the fuel pods in the CITYSCAPE, and in all three 'SCAPES' you can shoot the spinning FUEL CUBES (FCUBES) in the space sectors.

Watch the diagonal arrows flashing green to guide you in the right direction to find those elusive aliens, and keep your 3 smart bombs in reserve: you can use them to eliminate all your enemies!

(Smart bombs that also blow themselves to smithereens are not really that smart, but they do play their small part in the short history of space shoot-em ups).

The timer will monitor your gameplay: if it runs out, you will just have to start again. Sorry!

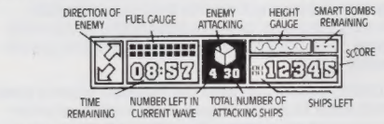
JOYSTICK CONTROLS:

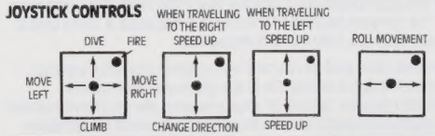
Use Joystick Port 2.
During the title screen/demo mode, push button to go to the OPTION SCREEN.
Use the joystick/button to select game options on the OPTION SCREEN.
In the CITYSCAPE, after landing to re-fuel, push the button to take off again.

KEYBOARD CONTROLS:

F1 KEY will reset your game to the OPTION SCREEN.
F3 KEY will reset your game to the title page and title music, which is a pretty smart tune (one of David's best!)
F5 KEY will jump to the Hi-Score Screen.
F7 KEY will pause, then re-start your game.
SPACE BAR will explode 3 smart bombs in each game, so use them wisely.

For those of you who are just too impatient, wanting to know the exact shape, colour and appearance of all your enemies, before you've been confronted by them, watch the CENTRAL MONITOR at the start of each new game: lo and behold ten different aliens for all to see!





ACE OF ACES

Cassette version is multi-load, follow screen prompts for instructions.

CONTROL FUNCTIONS

- You may see your current status and pause the game by pressing space bar or **F7.**
- Restart the game by pressing **F1** or the **RESTORE** key.
- Toggle the sound on and off with the **F3** key.
- Use **F5** key to abort the mission and set compass market to return to home base.

SELECTING A MISSION:

Once the load is completed your Group Captain will offer you the choice of PRACTICE or MISSION(S). Make your selection by moving the joystick up or down. Push the fire button to confirm your choice.

PRACTICE:

If you select PRACTICE the program will immediately load the game. When the load is completed you will be airborne over the English Channel. You must engage and destroy enemy aircraft. When you're out of ammunition or fuel, or badly damaged return to home base.
Use the practice mode to familiarize yourself with the aircraft and its controls. To successfully complete PRACTICE, return to home base intact.

MISSIONS:

As a perspective Ace of Aces, you may select any number of missions. Choose a mission with the pointer (joystick up/down, fire-button to select). After highlighting the adjacent box, move pointer to "Begin Game" and hit firebutton.
You will then be presented with "Accept" or "Reject". If you choose to "Accept" you will then be presented with the INTELLIGENCE REPORT.

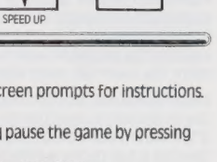
INTELLIGENCE REPORT

CID (Central Intelligence Division) has prepared your Intelligence Report. Top secret information from secret agents, resistance organizations and aerial reconnaissance will locate the exact positions of enemy targets. Intelligence will also provide you with information on weather conditions, recommended weapons and target sequence.
Following the Intelligence Report, a Mission Map will display the location of major cities and targets. After you leave the Mission Map you will be presented with the Bombardier's View of an empty bomb bay, ready for weapons loading.

LOADING YOUR PLANE WITH AMMUNITION AND FUEL:

Now you are ready to arm your Mosquito based on your choice of targets and the Intelligence Report, ie: if you choose to engage only enemy bombers and their fighter support, you'll want your Mosquito to be light and manouverable. Therefore, concentrate on a maximum load made up of rockets and cannon.

WEAPONS SELECTION:



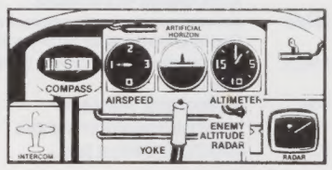
If your target(s) are U-Boats and Trains you'll want to beef up your bomb load with a minimum of cannon and/or rockets.
If you want to take a crack at Ace of Aces status by choosing all four missions, then you'll want to carefully select your choice of weapons status by choosing all four based on your bombing and dog fight capabilities and the Intelligence Report.
Move the yellow box around to select areas by pressing up or down on the joystick. If you wish to add or subtract bombs, rockets or cannons, move the yellow box to adjacent "plus or minus" signs.

Once you have reached maximum load, the program stops you from adding further weapons.
Use the + and – signs to add fuel tanks for long-range missions, ie. U-Boat.
Once you're armed, hit "Done" and takeoff sequence begins.

Now you're airborne on a real mission. First check with your navigator to make sure you're on course...
While in the air, change views by giving the fire button two quick taps. Then push the joystick in one of the directions as outlined below. You may also type the appropriate number key.

Double Click and:
Up: Pilot View or press # 1 **Down:** Navigator View or press # 4
Left: Port View or press # 2 **Centre:** Bomb Bay or press # 5
Right: Starboard View or press # 3

AIRCRAFT CONTROLS: PILOT'S VIEW (FRONT)



COMPASS

Your initial compass heading is South. Change course by pushing joystick left or right. The compass reading will reflect your new direction. The dark line on the compass indicates the correct heading for the next target. After all targets have been eliminated, the final heading will be to your home base.

RADAR

There are two radar indicators:
i) The radar 'sweep screen" on the extreme right indicates the enemy aircraft's relative distance from you.
ii) The vertical dial indicates the enemy aircraft's relative altitude to you.

INTERCOM

Your "intercom" icon indicates trouble spots in the aircraft. When the intercom blinks, hit firebutton twice and move joystick toward trouble spot as described above. Practice cycling through the positions. Learn how to move smoothly to the different positions in your aircraft. Alternatively press corresponding numeric key to select desired position.

Centre icon blinking, indicates a call from the bombardier that enemy ground target is now in sight.

AIRSPEED

This dial indicates your airspeed. In the above diagram it is set at 100 mph. Adjust from the engineer's view with boosters and throttle or careful use of flaps.

ALTITUDE

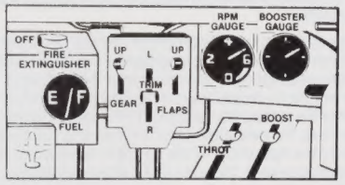
This dial indicates your altitude. The above diagram show it set at 2,000 feet. Adjust by pushing up or down on the joystick from the pilot's position.

ARTIFICIAL HORIZON

This dial represents your angle relative to the fixed horizon. When the plan is angled, you will turn. When the plan icon is black, you are decending. When icon is in white, you are climbing.

ENGINEERS VIEW

(Port/Starboard – sides) The engineer/navigator controls the engines and propellors of the Mosquito.



THROTTLE (RPM)

To change throttle settings, place the joystick diamond above the RPM dial. Hold firebutton and push joystick up or down to select setting.

BOOSTER (PITCH)

Place joystick diamond above the booster dial and adjust similar to throttle. The throttles and boosters function together. The throttles are like the accelerator on a car. The boosters (which control the angle or pitch of the propeliors blades) are like the gear of a car. Set both high for top speed. They must be in balance for efficient use of power and fuel and to avoid over-revving.

An engine is over-revving if the RPM needle is in the red zone. Reduce throttle immediately. If it won't reduce, then the engine is on fire. To prevent fire from spreading, use the fire extinguisher.

If the Booster does not match the throttle then the engine will either run away (over rev) or get bogged down (too high a gear).

FIRE EXTINGUISHER

Place the joystick diamond over the fire extinguisher. Hold firebutton down and move the joystick to the right. Use extinguishers with care. Once an engine is doused, it's permanently out. After you have lost an engine you must adjust trim to maintain an even course.

TRIM

Trim controls the rudder and therefore the direction of the aircraft. Place joystick diamond over trim lever and move the joystick up and down with firebutton pressed to adjust trim and setting and maintain desired compass heading.

LANDING GEAR

Landing gear will always be in up position unless you want to reduce speed suddenly. This is a useful tactic in trying to evade enemy fighters. Once selected, with joystick down and firebutton depressed drop the gear and the Mosquito will slow down.

FUEL

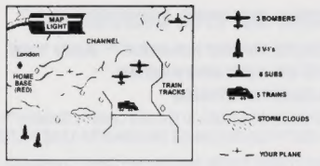
This indicates amount of petrol remaining. Check status frequently, especially on long range missions. When a tank is empty, move to bomb bay view. Using the joystick move diamond cursor over the fuel tank registering empty and with the firebutton down, throw drop lever. Reducing the load by dropping empty tanks saves remaining fuel.

FLAPS

To move flaps up and down, place joystick diamond over flap lever, depress fire button and move joystick up and down. Use the flaps to lose speed quickly.
Caution: this may cause damage to aircraft.

NAVIGATOR'S VIEW

The map will reflect the information provided in the Intelligence Report. This includes target locations, enemy strengths, strategies and their destinations.



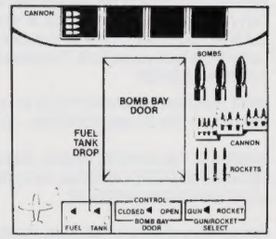
STRATEGY

Check map frequently. Watch icon movement. Get familiar with their respective speeds. Your challenge is to intercept the Train, Bombers and V-1 Rockets before they reach their destinations and to destroy the U-Boat pen before the enemy subs set out to attack Allied convoys in the North Atlantic.

Note: The fastest route is always a straight line from takeoff to target. The black marker line on the Pilot's compass indicates the correct heading and therefore the fastest route. Keep that marker centered on your compass and follow your progress on the navigator's map.

BOMBARDIER'S VIEW

The bombardier's view will teli you how many of each weapon you have remaining.



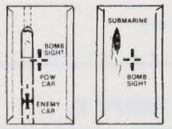
Fuel drop switches Drop when indicating empty to improve fuel economy.

Guns/cannon switch Select weapons choice depending on target.

Bomb Bay Door Switch open to see enemy target.

TACTICS

Bombing U-Boats/Trains.



Check Navigator's map to determine when you are in general area of enemy target.

Decrease altitude to 1,000 feet or less and set air speed to 100 mph. Open bomb bay doors when you are over target, you should see enemy target – if not, circle back and try again, Joystick up/down move the bomb sight correspondingly in order to line up target. Joystick left/right moves the target into view under your cursor. When target is in sights, press firebutton to drop the bomb.

TRAIN

The P.O.W. train is enroute to Berlin. You must stop it and free the P.O.W.'s on board. Aim at cars labelled with iron cross. Avoid Red Cross P.O.W. cars. Points are deducted if P.O.W. cars are bombed.
Notez: You get only one crack at P.O.W. train so be precise about altitude and air speed.

U-BOAT

The U-boats are preparing an attack on North Atlantic shipping. Stop them before they launch. Once you have opened your bomb bay door, the U-boats will be alerted to your presence and begin diving. Consequently each of the U-boats will be successively smaller and more difficult to hit.
Note: Once underwater, they will not re-surface for the duration of your mission so be certain of your correct airspeed and altitude.

DOG FIGHT/BOMBERS TACTICS

Cross hair turns red when in range of enemy target.
Push joystick up/down/left/right to centre target in sight, (ie: fly your plane till nose points at enemy).
To switch from cannon to rocket go to bomb bay screen and push switch right or left, you get double points for destroying enemy air targets with rockets.

Enemy fighters attack randomly without warning. Once an enemy fighter turns up on radar, your plane icon will freeze on the map. You MUST down the enemy fighter before he gets you. And make it quick, you're burning up fuel.

Enemy fighters will attack in greater numbers after you have struck at their Train and U-boat targets.

V-1 BUZZ BOMBS

Stop the V-1s before their launch on London. V-1s are slower than fighters but if they're too close to your aircraft when exploded, the shrapnel may damage your Mosquito.

BOMBERS

Stop the bombers before they reach London.

TIPS

Don't double click when firing, you may accidently change screens. With a full load of bombs you may need extra speed in order to climb. Your airplane will speed up as you drob bombs and fuel tanks. The extra weight and drag is removed. Keep this in mind when bombing U-boats and Trains.

STATUS SCREENS

You may see your current status and pause the game by pressing the **SPACE BAR.**

SCORING:

Bomber	= 100	Rocket Kills	= Double Cannon kill
V-1	= 150	Safe Return	= 2000
U-Boat	= 250	Extra Bombs	= 50
Train Cars	= +200	rockets	= 30
P.O.W. Cars	= –200	fuel	= 10
Engine	= 500	cannon	= 10

MASTERS OF THE UNIVERSE™

THE ARCADE GAME HE-MAN™ AND THE MASTERS OF THE UNIVERSE IN THE ILEARTH STONE

Deep beneath Snake Mountain, in the evil caverns, Skeletor™, Arch-Enemy of He-Man™ has discovered the powerful ILEARTH STONE.

Using its mighty magic, he has overthrown Castle Grayskull™, banished the Sorceress™ and created an army of evil clones for the final assault on the Palace, thus bringing his plans to be Lord of all Eternia to fruiition!

You, as He-Man™, must take up the challenge and enter Castle Grayskull™ to destroy the STONE from which Skeletor™ draws his invincible magical strength – only then can you succeed in battle with the enemy of your land.

The way is treacherous – Skeletor™ has guarded the STONE with magic and the force of his army of clones.

In trying to defend the Castle, Orko™ has let loose an 'imprison' spell upon Skeletor™ – but the spell rebounded against the impenetrable force field which Skeletor™ has bound around himself – with disasterous results. Orko™ is now imprisoned by his own spell and helpless within one of the many stone towers of Castle Grayskull™. Only his magic can help the might of He-Man™. You must search out the little magician and provide him with the CORRECT ingredients to conjure the spell you require. The spell to turn the Sword of Power into ATOM SMASHER!

Might goes hand in hand with right as YOU fight against the Lord of Destruction. The struggle continues – BUT WHO WILL WIN???

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SUPER HEUY II

THE HELICOPTER FLIGHT SIMULATOR

OVERVIEW

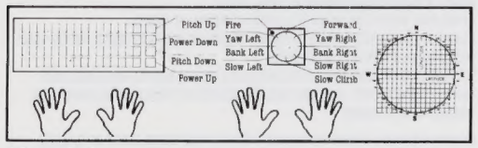
The UH2X is the successor to the now legendary UH1X with many new features incorporated into the already ultra hi-tech system. Over fifty displays, gauges and indicators fill the console and numerous one-touch keyboard controls as well as sophisticated on-board computer functions leave little for the "seat-of-your-pants" to do.

Of course, the maverick pilot can bypass all this and take off on pure nerve. It is entirely up to you.

The control system of the UH2X has been modified to satisfy novices and professionals alike. Although the control of the UH1X took avionics to a new level, it did prove a bit complicated for mere human beings. At Cosmi Aircraft, we strive to make your flying experience both a thrill and a pleasure. This philosophy has given birth to a new control system that not only provides complete manoeuverability but is also incredibly easy to use.

The system is designed to be ideal for a pilot/co-pilot situation as illustrated below. This way the pilot can control the flying exclusively while the co-pilot can act as computer operator, weapons officer, navigator and communications officer.

Whether solo or with a co-pilot, you will be soaring through the air in no time.



CONTROLS

Start the engine and turn on electrical systems with the run/stop key (**F2**) . Accelerate the engine with the **F7** key to between 500 and 600 RPM. If necessary, decelerate with the **F5** key. The rotor will automatically engage and the rotor RPM will slowly rise to match the engine speed (at a 1 to 10 ratio).

Accelerate (**F7**) to around 2000 RPM and let the rotor catch up, then accelerate to 3000-3500 RPM and wait for the rotor. These steps are taken to avoid too great a difference between engine and rotor RPM that could increase rotor wear.

To take off, raise the pitch (**F1**) and monitor the level on the LCD (38). At a point above equilibrium, which is determied by the rotor RPM, the helicopter will lift at a rate based on the level of pitch; the higher the pitch level, the faster it will lift. Monitor the altitude at the altimeter (45). Now lower pitch (**F3**) and the rate of lift will slow until it stops at a hover. This is the point of equilibrium. If the pitch level falls below this point, the craft will beginto descend at a rate that increases as pitch level is lowered. The actual rate of lift or decent is displayed on the VSI Readout (36), in positive (lift) or negative (descent) values. To move the helicopter horizontally, push the joystick forward a slight amount. The speedometer (44) will start to increment, the altitude indicator (37) will rise above the horizon line and, if the altitude was steady, it will begin to fall. This is because as the joystick (which is the cyclic control) is moved forward, it tilts the rotor in the same direction. This transfers some of the lifting power to forward acceleration. Therefore, it affects the system in the same way as if the pitch was lowered proportionately.

To return to level flight at the established speed, increase pitch (F1). The more speed required, the greater the pitch level will need to be.

However, at any pitch level, the cyclic control will transfer that power to forward motion. So that at full foward stick, the craft will always descend. To achieve the fastest level flight, raise pitch (**F1**) to full (38) and push the stick forward until the helicopter starts rising and pull back a bit if it starts to fall. The forward Speed will also depend on the engine RPM. Therefore, an increase in acceleration (**F7**) will increase both speed and lift and the pitch and cyclic controls will need to be adjusted.

To turn the helicopter, there are two general methods. The most direct and quickest is to push the joystick (cyclic) in the direction of turn. A half left turn (joystick to the diagonal forward/left) will accomplish a slower turn to the left while keeping the helicopter level. A full left will bank the craft and result in a faster left turn.

The second method is to change the pitch of the tail rotor using the anti-torque controls (39A) The LCD (39) shows a line across the centre when the torque caused by the main rotor is compensated for by the pitch of the tail rotor. Normally, this control is internally automatic, keeping steady with any rotor RPM changes. When the pitch is manually altered, the LCD (39) will indicate the change in under-or-over- compensation which will result in turning the craft left or right at a rate determined by the degree of change. Any manual change will need to be manually corrected to stop the turning by taking the opposite action.

Given this control system, the suggested method of operation is to bring the helicopter to the desired altitude (45) and speed (44) and then fly the craft with the stick almost exclusively. Changes in altitude can be accomplished by moving the stick forward or back and turns done with the other directions. Alternatively, a method more like actual helicopter controls would be to affix the joystick to the work surface and operate it with the left hand while the right hand operates the pitch and engine controls (function keys) on the computer.

The console displays dedicated to aircraft control are the engine (31) and rotor (30) RPM gauges, the altimeter (45), the speedometer (44), the compass (34), the altitude indicator (37), the pitch (38), tail-rotor (39), manifold pressure (40), LCD indicators and the VSI (36). The RPM and AVI (altitude/velocity indicator) systems have both slide gauge and digital readouts. All have warning lights on each side to indicate excessively low or high levels. The digital compass shows in degrees (000-360), the actual geographic heading of the helicopter with 000 being true north.

The altitude indicator, or artificial horizon, displays the deviation of the craft from the horizontal, or level flight. For example, when moving forward, the nose dips down and the A.I. rises. When slowing, the nose comes up and the A.I. moves down. If the dark lines go below the green half of the display, the helicopter is "flaring" and slowing very quickly to a halt. The helicopter should be level when landing. The four lights to the right of the A.I. are a graphic representation of horizontal displacement. These are useful when the display screen is completely covered or clear. The pitch and anti-torque LCD's show the level of change produced by the keyboard controls.

The manifold pressure LCD displays the power demands put on the engine. If the engine or rotor system is damaged, for example, it could put excessive strain on the engine driving up manifold pressure.

WARNING: At very high levels, the engine will automatically shut down to prevent rupture. The vertical speed indicator slows digitally the rate of lift (+) or decent (–). A safe landing should be made at the smallest possible negative rate.

Differences between a real cyclic control and joysticks should be noted. To reach a level of change with a cyclic, one would push it in a direction and hold it at the desired angle. Since the joystick is merely an on and off switch, to hold it "on" is to continue to change. Therefore, when using the joystick as a cyclic, hold it in the desired direction until the desired change has been achieved and then release it.

CAPABILITIES

The UH2X is equipped with two 9MM machine guns that hold 1000 rounds each. The guns are activated by the up-arrow key (**8A**) and fired by the joystick fire button. The ammunition supply is counted down while firing on the digital display (8). Two lights on the left indicate problems: either a low ammo supply (2) or a firing malfunction (5). The guns can be reloaded only at a base by using the loading commands on the computer. Turning on the 9MM deactivates the ATA Missiles.

The Air-To-Air Missiles are activated by the back arrow key (9A) and fired with the fire button. The UH2X carries a maximum of 20 missiles and can be reloaded only at Base. The missiles are short range and detonate automatically at five miles, or on impact. Three lights indicate low supply (3), launch malfunction (4), or arming malfunction (6). Turning on the ATA deactivates the 9MM guns.

The UH2X also carries a CO2 Tank for fire control capability. The tank release is set by the slash key (**7A**) and the CO2 is released with the space bar. A digital counter (7) displays the PSI Level and the light indicates low levels. The tank can be refilled only at a Base.

A hoist can be lowered and raised with the cursor keys (55). The computer screen displays a graphic image to help pinpoint the hoist line. An air radar screen (10) automatically activates when an airborne object comes into range. The centre of the screen represents the location of the UH2X and the bottom half is in the back of it.

Below the computer screen is an AM/PM digital clock (35). That determines the time of day and runs in real time. The clock can be set (35A) at the start of a mission only and runs from that point on.

NAVIGATION

The area available for flight is 200 miles square. The main base is at the exact centre (Plat 00,00), and there are four secondary bases at the centre of each quadrant (Plot 50,50). Each Base is equipped for refueling, reloading and repair.

An odometer (46) displays miles travelled and current direction. This same readout displays return mileage and direction when the Equals Key (46A) is pressed if the navigation system is tuned to a transmitting signal.

The navigation system can be tuned to three types of incoming signals with the tuning buttons (41A). On initial start-up, the day's VOR Frequency is established and is transmitted from the main Base only. Tuning through a range 000-999, a reception indicator will light at the proper frequency. The homing frequency is set each time a HOM command is used. The rescue frequency is established by the sender. All three signals can be transmitted simultaneously but only one side can be tuned to.

The ground radar (11) is activated when the navigation system is tuned to an incoming signal. Each type of signal source is displayed on the grid if the appropriate key is pressed; Base (32A), HOM (42A) and Rescue (43A). The compass heading to the source is displayed at three digital readouts: Base (32), HOM (42) and Rescue (43).

The ground radar grid (11) has two modes. When the UH2X is within five miles of a signal source, the grid is green and each square represents one mile. Outside of a five mile area, the grid turns red and each square represents 10 mies. When at the source of transmission, the grid will be green and the blip will cycle about the centre. The centre of the grid represents the position of the UH2X. The top half is north, the lower half, south. Right is east and left is west.

A wind speed and direction display (47) allows for course correction due to deviations caused by the wind. For example, if the wind speed is 10 miles an hour from the west and the UH2X is flying due north then the actual course is shifted to the Northwest by 10 miles an hour. This deviation will not show on the compass but will eventually show up on the navigation system.

Navigation in use might proceed as follows:

The UH2X takes off and flies due north, compass heading 000. The VOR navigation signal is initially set to the main Base which is the take-off point. Tune to the proper frequency (41A). The reception indicator will light up and the radar grid, which is green, will start to cycle. The odometer (46) will soon show one mile. The blip will stop cycling. Continue flying north. When the odometer reaches 2 miles, the blip will move down one square; at 3 miles, it will drop another square.

At this point, turn West, heading 270. After another mile, the blip will move one square to the right. The blip will always move in the opposite direction from the UH2X since it represents the course of transmission that the UH2X is moving away from or toward. At six miles out, the grid will turn red and the blip will move back near the centre because now each grid square in 10 miles wide.

The base return heading is digitally displayed (32) and should read between 130 and 140. Press the Equals Key (46A) and the odometer display will change momentarily to a readout of the miles and direction to return to the source.

If the helicopter now turns to the heading shown in the VOR Display (32) and continues to floow this or changing headings, the grid should turn green again soon as the UH2X gets within 5 miles of the source. When reaching the source, the blip will start cycling again.

The Radar will operate like this for any signal source as the blip and various sources can be switched between by tuning them in and then pressing the proper key.

There is alo an automatic course correction function. A compass heading can be dialed in (33A) and displayed (33). Then by pressing the Right shift key (33B), the UH2X will turn itself to this heading. This is one way to reach a very exact value, where steering might be less efficient. Once a heading is set, each time the shift key is pressed, the craft will come to this heading.

COMPUTER FUNCTIONS

The computer (49) displays various operations and messages and accepts commands from the keyboard.

Commands must be entered in alphanumerics only and activated by the return key (49A). The Pound Key (49B) clears the screen without acting on the input.

STATUS COMMANDS

- PLOT – Displays current position in mileage co-ordinates such as 10 miles north/25 miles east.
- GRAD – Reports which navigation signal is currently tracked on the ground radar.
- FUEL – Reports exact fuel supply.
- BASE – Reports on the condition of all area bases.
- FIRE – Reports location of fire hazards.
- STAT – Reports the number of possible enemy ships, planes or other craft.
- ERTM – Estimates time to helicopter failure based on damage to the craft.
- CLIM – Climate conditions.

FUNCTION COMMANDS

- HOM – Set a homing device. This establishes a new frequency and cancels transmission of any previous homing signals.
- GRID – Displays a landing grid when co-ordinating signals are available such as landing on a carrier at sea.
- TARGET – Displays a targeting grid for weapons. The grid flashes when a target is on line.
- THERM – Displays a thermal radar image to centre in on hot spots at fire locations for CO2 release.
- REPAIR – Activates repairs of malfunctions at base. First reports time required for repair of the particular problem.
- CANCEL – Abort repair if time reported is too long for current situation.
- LATA – Reload missiles. Only at Base.
- L9MM – Reload machine guns. Only at Base.
- LCO2 – Refill CO2 Tank. Only at Base.

AUTOMATIC DISPLAYS:

Cycle system status checks.
Malfunction reports.
Air Radar Detection.
Incoming Missile Display.
Hoist Display.
Incoming Rescue Signal Message.

MALFUNCTION CHARACTERISTICS

1. ATA Missile Launch or arming problems will deactivate firing.
2. 9MM Machine Guns will not fire when light is on.
3. Oil Line breaks will increase temperature until engine shut-down.
4. Transmission problems will affect rotor operation.
5. Rotor wear can occur with excessive power or large differences in engine and rotor RPM as well as combat damage. Will increase manifold pressure.
6. Compression problems will reduce engine power, lift and speed.
7. Tail rotor wear or damage will result in control problems.
8. Coolant leaks will raise temperatures.
9. Torque stabilizer damage will cause control problems.
10. Pitch controls and linkage damage will seriously disable flight controls.
11. Engine turbine problems will affect power and could cause failure.
12. Mainifold ruptures will seriously affect power and performance and could cause the engine to explode.
13. Electrical problems can disable various console displays, navigation and the computer.

Malfunctions can occur in many ways and cause various problems from disabled displays to complete destruction. If in combat, for example, being hit may not destroy the UH2X but will cause some damage. This can accumulate to a point of destruction or inability to control the aircraft.

MISSIONS

1. RENEGADE

A UH1X Helicopter has been stolen by a madman who threatens to destroy all the bases in the area. Only the UH2X has a chance to stop him. As a challenge, he has sent a message saying he will follow a square course from base to base and will save the main base for last. However, he has not said which direction he will be travelling in. Try to intercept him. Unfortunately, that gets easier as more bases are destroyed. Keep in mind that the UH1X is armed with machine guns and missiles also. The bases are numbered 1 to 4, starting with the Northeast Quadrant. The main base is Base Zero. Use the "Base" computer Command to check on their conditions. If two bases get wiped out, you will know which way he is heading. Consider this: He may have radioed in his intentions because he knew that you would come after him.

2. BRUSH FIRE

The rolling hills of California are burning again. With UH2X's new fire fighting abilities you can help. Get location reports on the computer and get there fast! Remember, fires spread. The longer it takes, the more damage is done. Fighting the fire with UH2X is like a bombing run. Fly over the fire using the thermal image and release the CO2 when the hot spot is centre screen. Hovering over the fire to release CO2 may put the fire out more quickly but the helicopter's external temperature (48) will rise quickly too. It's up to you which method to use. You must return to base to refill the tank. Also, there may be calls for the rescue of other fire fighters, do the best you can.

3. GULF OF TERROR

You are on carrier duty in the Mediterranean. Your job is reconnaissance of shipping in the area and to report on possible terrorist activities. There are gunboats and submarines patrolling all along the shore and hostilities could flare at any time. It is inadvisable to fire on unprovocative vessels but you are free to defend yourself if necessary. Good luck! We're all counting on you!

4. OIL FIRE

While in the Mediterranean area, an American Oil Drilling Operation has come under attack by hostile intruders. The rigging has been set ablaze and American working crews are in jeopardy. The UH2X, with its fire fighting, defense and rescue abilities has the best chance of dealing with the situation. Co-ordinates will be transmitted. Good luck! We're all counting on you!

5. BERMUDA TRAINGLE

The hurricane season has come to the Florida region. The UH2X is assigned to weather reconnaissance in the infamous Bermuda Triangle and no other information on your mission is available because no one really knows what will happen in "the Devil's Triangle."

6. ARCTIC RESCUE

At a Scientific Station near the Pole, the UH2X encounters some of the most severe conditions for flying possible. Researchers may get lost in a blizzard, or fall into constantly moving crevices in the ice, or other helicopters may go down in gale force winds. Flying near the Pole will affect the compass operations. Of course, nothing at all can happen, too, but don't count on it.

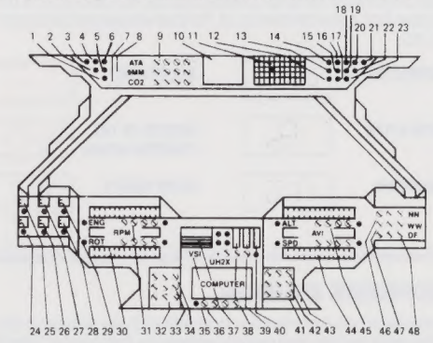
In all scenarios, the main base and four secondary bases are located at the same co-ordinates, although in the Gulf of Terror, they are carriers instead of bases, and in the Bermuda Triangle, they are located on islands. Various messages and displays will aid you in your assignments but the pilot is under no obligation to perform his or her duties in any prescribed manner.

TAKE-OFF PROCEDURES

1. Start the engine (run/stop) and raise the power (F7) to 500 RPM.
2. Wait for rotor to engage and wind up to 50 RPM.
3. Raise power (F7) to 3000-3500 RPM, pausing for the rotor RPM to catch up.
4. Increase pitch (F1) until lift-off and climb to 200 feet altitude.
5. Push cyclic (joystick) foward to gain speed, and raise pitch (F1) to maintain altitude.
6. At desired speed and altitude, set pitch to approximately 75 per cent and move cyclic forward or backward as necessary to maintain altitude.
7. Cruise, lift, descend and turn with cyclic only unless minor pitch or power adjustments are necessary.
8. More speed is achieved with power (F7) increases. Adjust pitch and cyclic as necessary.

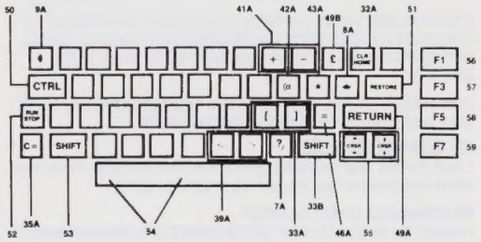
LANDING

1. Push cyclic forward to descend at VSI rate of approximately –15 fps.
2. At 200 feet, pull back cyclic to level off.
3. Lower pitch (F3) and move cyclic as necessary to descend.
4. Adjust pitch up (F1) and down (F3) to maintain a VSI rate less than –5 fps.
5. Slow to stop by pulling back on cyclic until nose rises and push forward to level helicopter (attitude indicator).
6. Descend to ground at minimum VSI rate with pitch controls.

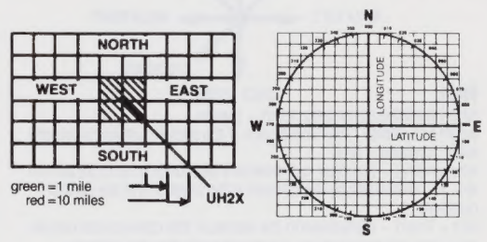


1. CO2 low level light
2. 9MM low ammo light
3. ATA low supply light
4. ATA launch error
5. 9MM firing error
6. ATA arming error
7. CO2 psi readout
8. 9MM ammo readout
9. ATA supply readout
10. Air radar screen
11. Ground radar screen
12. Oil line malfunction
13. Trans. malfunction
14. Rotor wear
15. Tail rotor wear
16. Coolant warning
17. Rotor torque
18. Pitch control error
19. Linkage malfunction
20. Turbine malfunction
21. Manifold pressure
22. Electrical systems
23. Compression warning
24. Generator
25. Temperature
26. Carburettor
27. Oil pressure
28. Exhaust temperature
29. Fuel
30. Rotor RPM
31. Engine RPM
32. Base nav heading
33. Auto course heading
34. Compass heading
35. Clock and AM/PM light
36. Vertical speed indicator
37. Attitude indicator
38. Pitch level
39. Tail rotor turn
40. Manifold pressure
41. Nav radio frequency
42. HOM heading
43. Rescue heading
44. Speedometer
45. Altimeter
46. Odometer/Direction
47. Wind speed & direct.
48. External temperature

KEYBOARD



50. Program pause
51. Cancel program
52. Engine run/stop
53. Load new program
54. CO2 release
55. Hoist controls
56. Pitch level UP
57. Pitch level DOWN
58. Engine decelerate
59. Engine accelerate
7A. CO2 on/off switch
8A. 9MM guns on/off
9A. ATA missiles on/off
32A. Base nav on radar
33A. Auto course set
33B. Auto course act
35A. Clock set
39A. Tail rotor control
41A. Nav radio tuner
42A. HOM on radar
43A. Rescue on radar
46A. Distance on radar
49A. Computer enter key
49B. Clear computer key



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